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ABSTRACT

Funded under the Apple Model Program for the Integration of Computers in the Preparation of Educators, the University of South Alabama began a 3-year project in 1989 to train faculty in its College of Education to incorporate hypermedia into their curriculum. HyperCard was selected as a course presentation and development tool because of its relatively short learning curve, reasonable cost, and potential for immediate benefits. Other project goals were to supply all faculty with a personal computer, design and develop multimedia instructional materials, and operate a multimedia laboratory. Evaluation of the program concentrated on program context, process, and product. Data sources included review of project proposals, analysis of internal evaluation data, visitation to field applications, interviews, and photo-interviews. Photography was chosen as an evaluation method because of its holistic quality, the volume of detail it provides, and the role it plays as a source of discussion. Results of the program evaluation reveal that: (1) most early adopters had prior experiences with technology; (2) HyperCard has been used by program participants in presentations, interactive video and animation projects, and reading analysis; (3) the biggest need cited for skills training was "time to practice"; (4) photo-interviews yielded rich data and provided a means to describe and explain the program and its consequences; and (5) photo-interviewing can serve as an instructional as well as an evaluative strategy given the projective nature of visual images. (DB)

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TRAINING UNIVERSITY FACULTY TO INTEGRATE HYPERMEDIA INTO THE TEACHER TRAINING CURRICULUM

by

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March 1990

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TRAINING UNIVERSITY FACULTY TO INTEGRATE HYPERMEDIA INTO THE TEACHER TRAINING CURRICULUM

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ABSTRACT

One of nine national centers funded under the Apple Model Program for the Integration of Computers in the Preparation of Educators, the University of South Alabama's project focuses on using HyperCard as a course presentation and development tool. Specifically, a perception-based model of program evaluation is used to describe and judge contexts, processes and products of faculty training as well as our learnings regarding the restructuring of the college to integrate technology into the College of Education's diverse curricula. This session will focus on the delivery matrix, barriers to training, and using innovative data collection strategies to document program outcomes.

INTRODUCTION

In April 1989, the College of Education began to operate a three year grant from Apple Computers Inc. HyperCard was selected as the medium to integrate many of the college's short and long term technology goals. Specifically, it was chosen because of two assumptions:
1) Supplying faculty with computers does not assure that they will become used as part of the educational and instructional program at the college level. Faculty are reluctant to alter their teaching approaches and the availability of computers is limited.
2) HyperCard provides a unique opportunity to involve faculty and students in the use of computers because of its relatively short learning curve, reasonable cost and potential for immediate benefits.

The four primary goals of the program are to:
- supply all faculty with a Macintosh or other personal computer;
- train a network of teacher educators and K-12 teachers to incorporate Hypermedia into their curriculum ;
- design and develop quality multi-media instructional materials for use within the College of Education with the eventually expectation of exporting these materials to other higher education departments;
- operate a multi-media laboratory which: (1) extends access to hardware and software equipment; (2) links university faculty with K-12 teachers in integrated learning situations; and (3) expands our research base involving HyperCard's role in education.

OUTLINE OF THE STUDY AND METHODS

According to a thesis articulated by Graubard (ref [1]), the task for educational reform and social change is not to initiate further studies but to equip individuals with the means to understand and struggle against structural and attitudinal impediments to implementing known solutions. This requires an integrated and balanced division of effort. Even so, the question remains--how can the rhetoric of "integrative" approaches be transformed into action which can be evaluated—especially when a program is in its first year of operation?

During April of 1989, major evaluation questions as well as standards of quality were negotiated between the internal evaluators and the funder. These six major questions addressed below concentrate on three phases of the program: context, process and product.

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[1] A Graubard, Free the Children (Pantheon Books, NY, 1972)

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MAJOR EVALUATION QUESTIONS

1. Who are the participants and what is the nature of their participation over time?
2. What training occurs and how effective is it?
3. What use of the Macintosh occurs in classrooms of participating faculty?
4. What other training is taken by faculty participants?
5. What is the resultant impact of the Macintosh's use on students?
6. What are outcomes, needed follow-ups, and replication strategies?

Diverse sources of data (qualitative and quantitative) are used to describe each question. Data sources include:

- review of project proposals, project officer files as well as curricular and training materials;
- analysis of internal evaluation data;
- visitation to model sites/field applications throughout the project;
- individual and group interviewing with university staff/administrators, K-12 teachers, 20 staff, Apple program officers, and students.

ADDING AN INNOVATIVE DATA SOURCE

We selected photo-interviewing as an innovative data strategy because it offers much promise in collecting holistic and consistent samples or records of significant project phenomena and it complements the perception-based model of evaluation. The viability of photo-interviewing has been well documented in anthropology and sociology. Photography as a method of inquiry, however, has rarely been applied systematically in educational program evaluation and research. We need to know more about the rhetoric of words and pictures in educational inquiry. "The meaning of 'information', whether it is particular or general, is not a problem about facts or data, but a problem in our understanding to ideals and action" (ref [2]).

The function of all analysis is to find patterns. To identify patterns, photo-interviewing tracks sequences of information over a period of time and selects responses to emphasize "peaks of information", controlling for when and where they happen during disparate instructional events. This is a flexible approach which can collect unpredictable as well as scheduled behaviors in training. As Hall (ref [3]) advises, we approach the photographic content with an open strategy in order to respond to their holistic content. The strategy consists of the following major phases detailed below:

1. Photographs of training and classroom environments are screened individually and then collectively (e.g., compiled via videotape) by the internal project evaluators and data collectors.
2. Next, data collectors interview each other about perceptions invoked by the photographs of training.
3. Photographs are assembled in preliminary structured units which document a visual narrative. For example, photo events can be arranged as chronological experiences, as spatial maps of an environment and/or as models.
4. Still photographs are potentially overwhelming in their volume of detail. Thus, patterns need to be prioritized and tested for consistency across informants. A systematic inventory is undertaken to select the most appropriate photographs as interview stimuli.

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[2] J Collier & M Collier, Visual Anthropology: Photography as a Research Method (University of New Mexico Press, Albuquerque, NM, 1986)

[3] E Hall, Handbook for Proxemic Research (Society for the Anthropology of Visual Communication, Washington, DC, 1974)

5. The final phase involves abstracting and validating insights from photographs through detailed interviews with key informants. Ongoing in-depth interviews have been undertaken with College of Education faculty as well as a sampling of five faculty and staff from other disciplines since the project's initial funding. Oral interview questions reflect the evaluation paradigm's six major questions. Photographs selected using these procedures are used to clarify and extend the data derived from the oral interviews.

MAJOR LEARNINGS AND EMERGING POLEMICS

An evaluation is only as good as the shared Umwelt the evaluator is able to coalesce and make overt among all significant players. Certainly, recording and interpreting trends should be within the scope of a good evaluation. Approaching this willed reality or new Umwelt can be facilitated by Polanyi's (ref [4]) constructs of "indwelling" and identifying polemics as signposts. By presenting trends and polemics emerging from our evaluation experiences, we hope to stimulate discussion of how evaluating the impact of dynamic technology projects can be approached. Several of these trends and polemics are considered below:

- Costs for course development were originally time intensive, but course revisions have occurred significantly faster than with traditional methods.
- Amongst the faculty, the most active early adopters tended to have prior experiences with technology. About one third have had recent experiences with the Macintosh and one third continue to be actively engaged in self-training.
- To date, the uses of HyperCard include: presentations by Education faculty, animation projects with the Art Department, interactive video with the Medical School, reading analysis with MacRecorder, and qualitative data analysis.
- To accommodate a high degree of faculty dissatisfaction with computer training received prior to the project from other sources, a series of informal AND formal training programmes have been offered.
- The biggest need cited for skills training has been "time to practice".
- Collecting a holistic picture of the project demands a certain amount of risk-taking on the part of the evaluated and the evaluators. In fact, all stakeholders represented in the evaluation risk losing some of their uniqueness in the process of negotiating a greater shared reality.
- Levels of consciousness/value development/ethnocentricity of the evaluated have a significant impact on the evaluation's success and timeline.
- Photo-interviews yielded "richer data" that that obtained from verbal interviewing procedures given informants tended to examine images more carefully than the written or spoken word. Further, it appears photo-interviews can generate data particularly helpful for pilot-stage projects where innovation and development rather than status quo and maintenance are priorities.
- By providing a common stimulus for all informants, photographic images both solicit differences and similarities in individual perception which can be analyzed across groups of perceivers. Photo-interviewing provided a means of "getting inside" the program and its context to describe and explain the program and its consequences in terms of participants' realities and meaning systems that oral interviewing did not permit.
- Photo-interviewing can serve as an instructional as well as an evaluative strategy given the projective nature of visual images. Photographs seem to have a life of their own beyond the evaluation or the project. For example, those photographs which generated negative perceptions (e.g., viewed as inaccurate, disturbing or infuriating by informants) were often indicative of rejection of overt data at odds with their own internal data or belief structures.

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[4] M Polanyi, Meaning (University of Chicago Press, Chicago, IL, 1975)